

IN THE CLAIMS:

Please enter any changes in the claims indicated in the complete copy of the pending claims, as sought to be amended, presented below:

1. **(Currently Amended)** A strontium calcium thiogallate phosphor doped with divalent europium, and having the following formula:



where x is a value such that both Sr and Ca are present and is greater than or equal to 0.0001 to 1, y is a value defining sufficient Eu^{2+} to provide luminescent emission, and z is greater than 0.07 up 0.0001 to 0.2 based on the mole amount of $\text{Sr}_{1-x}\text{Ca}_x\text{Ga}_2\text{S}_4$ ~~$\text{Sr}_{1-x}\text{Ca}_x\text{Ga}_2\text{S}_4:y\text{Eu}^{2+}$~~ .

2. **(Currently Amended)** The phosphor of claim 1, wherein z is 0.08 ~~0.001~~ to 0.2.
3. **(Currently Amended)** The phosphor of claim 1, wherein z is 0.09 to 0.2 ~~0.001 to 0.1~~.
4. **(Original)** The phosphor of claim 1, wherein y is 0.001 to 0.1 based on the mole amount of $\text{Sr}_{1-x}\text{Ca}_x\text{Ga}_2\text{S}_4$.
5. **(Original)** The phosphor of claim 4, wherein y is 0.01 to 0.08
6. **(Original)** The phosphor of claim 4, wherein y is 0.01 to 0.04.
7. **(Original)** The phosphor of claim 1, wherein the phosphor has an emission peak of 535 nm to 560 nm.
8. **(Original)** The phosphor of claim 7, wherein the emission peak has a bandwidth of 50 nm or less under excitation with an emission source at $440 \text{ nm} \pm 40 \text{ nm}$.

9. (New) The phosphor of claim 1, wherein the phosphor has an emission peak of 536 nm to 560 nm.
10. (New) The phosphor of claim 1, wherein the phosphor has an emission peak of 537 nm to 560 nm.
11. (New) The phosphor of claim 1, wherein the phosphor has an emission peak of 538 nm to 560 nm.
12. (New) The phosphor of claim 1, wherein the phosphor has an emission peak of 539 nm to 560 nm.
13. (New) The phosphor of claim 1, wherein the phosphor has an emission peak of 540 nm to 560 nm.
14. (New) The phosphor of claim 1, wherein the phosphor has an emission peak of 541 nm to 560 nm.
15. (New) The phosphor of claim 1, wherein the phosphor is made up of particles with primary particles that are in the size range 2-4 microns.